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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,485	09/27/2005	Didier Frachon	268846US6PCT	5342
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.			EXAMINER	
1940 DUKE STREET			WHITTINGTON, KENNETH	
ALEXANDRIA, VA 22314			ART UNIT	PAPER NUMBER
			2862	
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			12/17/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/530,485	Applicant(s) FRACHON ET AL.	
	Examiner Kenneth J. Whittington	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-33 is/are rejected.
- 7) ☒ Claim(s) 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/17/07;9/27/05 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment filed September 17, 2007 has been entered and considered. In view thereof, the objection to the Specification and part of the objections to the drawings are withdrawn.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the at least one magnet being adhesively bonded to a T-shaped ferromagnetic piece as recited in claim 25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the

several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 18, 19, 23, 24, 26, 27 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Dilger et al. (US5670876), hereinafter Dilger. Regarding claim 1, Dilger discloses:

a target made of a ferromagnetic material (See Dilger FIGS. 1-5, item 20);

at least one magnet, the target and the at least one magnet defining between one another an air gap (See FIGS. 1-5, items 32 and 34);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-5, item 36),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the at least one magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-5, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding claim 19, Dilger discloses the target is translationally mobile along an axis perpendicular to an axis of magnetization of the at least one magnet (See FIGS. 1-5, note displacement direction 24).

Regarding claim 23, Dilger discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIGS. 1-7).

Regarding claim 24, Dilger discloses a ferromagnetic piece adhesively bonded to the back of the at least one magnet (See FIGS. 1-5, item 42).

Regarding claim 26, Dilger discloses the target having a particular shape configured to deliver a linear induction as a function of the displacement of the target (See FIGS. 1-5, note direction and orientation and col. 5, lines 12-32).

Regarding claim 27, Dilger discloses the magnetosensitive element is placed in the cavity in a zone of minimal induction (See FIGS. 6 and 7).

Regarding claim 31, Dilger discloses the target having a shape to generate a variation of thickness of the air gap that is function of position relative to the target (See FIGS. 1-7).

Claims 18, 20, 23-25, 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Hattori et al. (US4424705), hereinafter Hattori. Regarding claim 18, Hattori discloses:

a target made of a ferromagnetic material (See Hattori FIG. 4, item 12);

at least one magnet, the target and the magnet defining between one another an air gap (See FIG. 4, item 13);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIG. 4, item 17),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIG. 4, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding claim 20, Hattori discloses the target translationally mobile along an axis parallel to an axis of magnetization of the at least one magnet (See FIG. 4).

Regarding claim 23, Hattori discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIG. 4, note structure).

Regarding claim 24, Hattori discloses a ferromagnetic piece adhesively bonded to the back of the at least one magnet (See FIG. 4, item 14).

Regarding claim 25, Hattori discloses the at least one magnet adhesively bonded to a T-shaped ferromagnetic piece (See FIG. 4, items 14 and 17).

Regarding claim 31, Hattori discloses the target having a shape to generate a variation of thickness of the air gap that is function of position relative to the target (See FIG. 4 and disclosure related thereto).

Regarding claim 32, Hattori discloses the at least one magnet and the magnetosensitive element are disposed opposite a ferromagnetic membrane configured to be deformed under effect of a force applied vertically to a membrane (See FIG. 4 and disclosure related thereto).

Claims 18, 21 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Carr et al. (US4745363), hereinafter Carr. Regarding claim 18, Carr discloses:

a target made of a ferromagnetic material (See Carr FIGS. 1-4, wheel with teeth 16, 18, 20);

at least one magnet, the target and the at least one magnet defining between one another an air gap (See FIGS. 1-4, item 10);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-4, item 14),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-4, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding claim 21, Carr discloses the target is rotationally mobile around a shaft perpendicular to an axis of magnetization of the at least one magnet (See FIGS. 1-4).

Regarding claim 33, Carr discloses the recited analog position sensor of claim 21 (See above).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 18, 21 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woyton (US3916326) in view of Jansseune (US6043646). Regarding these claims, Woyton teaches:

a target made of a ferromagnetic material, the target comprising three spiral teeth and having a measurable angular travel of 360 degrees (See Woyton FIG. 1, item 14);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS: 1-4, item 14),

wherein the target has a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIG. 1, note structure and orientation of target and sensor).

However, Woyton does not teach the recited sensor/magnet arrangement. Jansseune teaches a sensor arrangement for detecting the passing of a ferromagnetic passing part comprising at least one magnet, the target and magnet defining an air gap, the at least one magnet is magnetized in a direction

perpendicular to a front surface of the at least one magnet towards the air gap, the direction being perpendicular to the movement of the target, the at least one magnet having a cavity with a magnetosensitive sensor seated therein (See Jansseune FIG. 1, note magnet, sensor and orientation in relation to moving part). It would have been obvious at the time the invention was made to incorporate the sensor arrangement of Jansseune into the apparatus of Carr. One having ordinary skill in the art would have been motivated to do so because such are equivalent sensors for measuring passing of a magnetic part and the sensor of Jansseune provides a sensor that is simply constructed and easy to produce (See Jansseune col. 1, lines 37-40).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carr in view of McDearmon et al. (US20040017190), hereinafter McDearmon. Regarding this claim, Carr discloses the magnet/sensor axis perpendicular to the axis of rotation of the wheel, but not parallel. McDearmon teaches a rotary position sensor that is magnetically back biased wherein the magnet/sensor axis is either perpendicular or parallel to the rotational axis of the wheel (See McDearmon FIGS. 2 and 3,

and paragraph 0022). It would have been obvious at the time the invention was made to use either oriented sensor arrangement such that the magnet/sensor is axially oriented as taught by McDearmon. One having ordinary skill in the art would do this because each are equal orientations to measure the rotation of a magnetic wheel as shown in FIGS. 2 and 3 of McDearmon.

Allowable Subject Matter

Claim 34 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not show or teach the method of creating the position function as recited in the claim and in combination with the other features of the claim.

Response to Arguments

Applicants' arguments filed September 17, 2007 have been fully considered but they are not persuasive.

Drawings Objections

Applicants' argue that FIG. 17 shows the features of claim 25. Claim 25 recites that the at least one magnet is bonded to a t-shaped ferromagnetic piece. Note that claim 1, from which claim 25 depends, requires the at least one magnet to have a cavity therein. The features of claim 25 must be consistent with those of claim 1, i.e., the at least one magnet still have a cavity therein and a t-shaped ferromagnetic piece bonded thereto. FIG. 17 only concerns a t-shaped ferromagnetic piece, but no cavity. Therefore, claim 25 remains unshown in the drawings.

Remarks Regarding the Rejections Applying Dilger

Regarding the rejection of claim 18 as being anticipated by Dilger, Applicants' have argued that Dilger fails to show the "at least one magnet", the "target" and the magnetosensitive element as recited in the claim.

Dilger discloses a pair of magnets, 33 and 34, which can be interpreted as "at least one magnet" (See Dilger FIGS. 1-5, items 33 and 34). This pair of magnets, or "at least one magnet" defines a cavity on their front surface which is shown in FIGS. 1-5 (note also FIGS. 6 and 7 for further illustration

of this cavity), the sensor 36 is then placed within this cavity (See FIGS. 1-7, note induction sensor 36). Thus, Dilger discloses the recited at least one magnet as defined in the claims as well the sensor.

Dilger also discloses a target made of ferromagnetic material that has a specific geometric configuration (See FIG. 1, note target 20). The shape, slope and thickness of this target is based on a predefined function to provide an induction variation as a function of target position (See Dilger col. 5, lines 25-32).

Because Dilger discloses the target, the at least one magnet and the magnetosensitive sensor in the manner as recited in the claims, the rejections applying Dilger stand.

Remarks Regarding the Rejections Applying Hattori

Regarding the rejection of claim 18 as being anticipated by Hattori, Applicants first argue that Hattori does not show the use of Hall sensor. However, claim 18 does not require a Hall sensor and thus any such arguments will not be considered until such feature is claimed.

Applicants then provide some the features of Hattori and note that claim 18 does not recite such elements (See page 10 of

remarks at lines 17-21). However, the claim is written in open terms, i.e., "comprising", thus any prior art device can have any amount of additional features as long as its disclosures read on the claims. It is also noted the rejected claim does not have to recite the elements of the prior art device for a proper rejection, but rather the prior art device simply needs to read on the recited features of the claims, either explicitly or inherently.

Applicants' then note deficiencies of Hattori in view of Applicants' invention. However, it is not the operability of the prior art reference, but rather what it discloses.

For the forgoing reasons and in view of the rejections noted above, Hattori teaches the features of claim 18 and the rejections applying Hattori stand.

Remarks Regarding the Rejections Applying Carr

Regarding the rejection of claim 18 as being anticipated by Carr, Applicants first argue that Carr does not show the use of Hall sensor or any "continuous variation of induction" thereof. However, claim 18 does not require a Hall sensor or any continuous variation of induction and thus any such arguments will not be considered until such feature is claimed.

Incidentally, a Hall sensor on its own is an analog sensor which provides a continuous output. The associated IC can make the output signal therefrom digital in form.

Applicants' also argue that the usage of a digital Hall IC is different from that contemplated by Applicants' invention. However, the fact that the reference is "different" from Applicants' invention is not controlling; it is the claimed invention that controls the rejection.

Therefore, because Carr discloses the features of claim 18 as outlined in the rejections above and in response to the Applicants' arguments, the rejections based thereon stand.

Remarks Regarding the Rejections Applying Woyton and Jansseune

Regarding this rejection, Applicants' note the possibility of combining to obtain a sensor in which the variation of the signal would not be linear. Thus, it appears that Applicants' are not disputing the combination in general, rather Applicants' are only disputing the linearity of the response. However, claim 18 does not require any variation of signal to be linear. Thus, the combination does not need to teach any linear response. Furthermore, claim 34 which depends from claim 18

contemplates the function to be non-linear (See last line).
Thus, this argument asserted by Applicants' is also directly
contrary to the claim language.

As noted in the rejection above, this combination teaches
all the recited features of claim 18 and accordingly, these
rejections stand as well.

Conclusion

Applicant's amendment necessitated the new ground(s) of
rejection presented in this Office action. Accordingly, **THIS
ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is
reminded of the extension of time policy as set forth in 37
CFR 1.136(a).

A shortened statutory period for reply to this final action
is set to expire THREE MONTHS from the mailing date of this
action. In the event a first reply is filed within TWO MONTHS
of the mailing date of this final action and the advisory action
is not mailed until after the end of the THREE-MONTH shortened
statutory period, then the shortened statutory period will
expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated
from the mailing date of the advisory action. In no event,

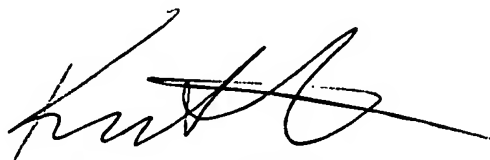
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Whittington whose telephone number is (571) 272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Kenneth J Whittington
Examiner
Art Unit 2862

kjw



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